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EDITOR

## PRESENT STATUS OF SERUM THERAPY.\*

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### SCARLET FEVER.

Moser, in 1902, and Gabrichevsky and Savdhenko, in 1905, introduced scarlet fever serum into Austria and Russia respectively. Despite the appearance of several important articles in the Russian and German literature in 1905 and 1906, the opinion was very generally held that human scarlet fever convalescent serum was much superior as a therapeutic agent to such scarlet fever sera as were then available. Only the difficulties incidental to obtaining adequate supplies interfered with the widespread use of scarlet fever convalescent serum. Its value was definitely shown in the published results of Weisbecker, Reiss and Jungmann, Zingher, Kling, Widfelt, Weaver, Hannah, and many others.

In 1917 Schultz and Charlton demonstrated the phenomenon of blanching. Convalescent scarlet fever serum introduced intracutaneously into the skin of a patient with fully developed rash caused the latter to fade at the site of injection. That was evidence of the specific antitoxin neutralization of the toxin in the skin of the patient so treated. This observation was followed by an important series of papers on the bacteriology of scarlet fever, and finally the work of the Dicks and of Dochez has established

specific serum therapy in scarlet fever on a secure foundation.

What are the indications for the employment of scarlet fever streptococcus serum or scarlet fever antitoxin and what benefits will accrue to the patient when such treatment is carried out?

Blake and Trask have published results obtained in the treatment of patients with Dochez serum. G. F. and G. H. Dick have also recorded results obtained where scarlet fever antitoxin prepared by their methods was used. Gardner Robb in Belfast, Cushing in Montreal, and Hannah in Toronto, have recently published their observations in large series of cases treated with specific scarlet fever serum or antitoxin. Cushing treated 500 cases with antitoxin during the year 1925-1926. Of these about 5 per cent were classified as severe cases, the others as moderate or mild. During the previous year Cushing had under his charge over 100 cases of practically the same types of cases not treated with serum. This constituted a control group. An additional control group of 300 was observed at the same time as specific serum treatment was given to the group of 500 patients.

The rule in treatment was to give a full dose of serum to every definite case of scarlet fever on admission unless the case was extremely mild (temperature less than 100°F.) or when there was a history of asthma or idiosyncrasy to horse

\* Read at the Cleveland Assembly of the Inter-State Post Graduate Medical Association of North America, October 21, 1926.



serum. Cushing states that the most constant and certain action of the serum is to produce a marked fall in temperature. A similar favorable effect on the pulse rate is observed. The eruption fades very quickly, a great improvement is manifested in the toxic symptoms, namely: rash, delirium, headache, joint-pains, etc. Cushing emphasizes that all observers are agreed that the administration of adequate doses of potent scarlet fever antitoxin will cut short or abort the first week's fever.

Cushing's observations on the effect of serum on the complications are also of interest. During 1926, in a series of 1073 cases, 45 per cent developed complications, whereas in those treated with the antitoxin 25 per cent only suffered from sequelae. Without serum, otitis media as a complication developed in 14 per cent of patients, whereas in the serum-treated group only 8 per cent developed middle ear disease. Similar favorable results were noted in respect to other complications. The case fatality-rate among scarlet fever patients under Cushing's care in 1924-25-26 has fallen from 3.5 to 1.2 per cent. Cushing believes that scarlet fever antitoxin should be administered to every case of the disease at the earliest possible moment. The dose of concentrated serum most generally recommended is from 15 c.c. to 30 c.c. repeated promptly if necessary.

(Continued in next issue.)



### Health Is Major Educational Objective.

The principal of the Richland School at Shafter, in Kern County, F. Eugene Foster, has written a series of articles dealing with the major objectives of education. These articles are being published in the *Shafter Progress* and the first of the series pertains to health. In this article Mr. Foster writes as follows:

"The seven great objectives of education as we see them today, are health, command of the fundamental processes, worthy home membership, vocation, civic education, worthy use of leisure time and ethical character. In these articles I shall endeavor to tell how we are encouraging and developing each one of these objectives, that the child may become fully aware of his responsibilities of life and seek in each one of these departments to bring his or her work up to a good standard.

In health training and corrective measures, we are sadly handicapped because of not having a school nurse, dentist or

physician. No less than 25 per cent. of the pupils in our school are in need of medical or dental attention. These cases include enlarged tonsils, adenoids, decayed teeth, poor vision, ears and other defects of health.

To retard the child even more parents frequently resent a suggestion from the teacher that certain professional services be rendered. In many cases, though, we have received the most sincere cooperation and much good has come thereof. Where the parents are unable to comply with our desires the county hospital has done many good deeds. With this help the child has been able to advance more rapidly and easily.

In July the county board of supervisors will be asked to apportion money for a county school nurse, whose duty it will be to work in conjunction with the school and the home. Last year they did not see fit to grant this request for a nurse, but we shall try again this year.

The teachers can and are doing a great deal to familiarize the pupils in the prevention of certain diseases through proper sanitation, ventilation and assimilation of proper foods, but many physical defects are to be taken into consideration with which the teacher is neither familiar or capable of remedying.

The time is not far off when I hope to see a portable dentist's office on a truck going from school to school in this county doing free dental work to all school pupils. Such a plan is in vogue in San Joaquin County and has proven remarkably successful. The cost of such a venture in the saving of health cost is more than taken care of. Proper dental care means better health and better health means more rapid progress in school at a saving to the taxpayer.

Larger cities have their dentists, nurses, matrons and optometrists to care for the health of the child. Health is the first requisite, not only of school life, but of life itself. Without it we can accomplish little or nothing. Hence the reason for so many health centers and clinics to take care of these children whose parents cannot afford to pay for medical attention.

Eye clinics provide a valuable service in diagnosis, giving treatments, muscular exercise, refractions and when necessary provide glasses for children who are found worthy to receive their glasses free. The testing of vision is of paramount value in determining the future educational procedure of the child. The number of pupils suffering from defective vision, who fall behind in their classes is appalling.

It is true we cannot hope to have all



the health attention given in the larger districts, nor do we need it. However, it is possible to have a graduate nurse holding state credentials to work in our schools. It would be quite possible for such schools as Wasco, McFarland, Poplar, Rio Bravo and Richland with possibly a few others combine in employing a school nurse dividing her time between the schools.

This would mean better health, since she could cooperate with the parents in getting proper attention for the children. Nutrition classes could be established. Classes for correcting physical defects, etc. The cost to each district would be very small and the benefits enormous.

A nurse is just as essential to a school as a teacher or a principal. It needs a specialist to advise and keep these children physically well, that they may be morally awake and mentally alert. Nothing succeeds like success, and I feel the keen need of a nurse to help us in succeeding."



#### MORBIDITY.\*

##### Diphtheria.

181 cases of diphtheria have been reported, as follows: Alameda County 3, Berkeley 3, Hayward 1, Oakland 5, Butte County 1, Chico 2, Gridley 1, Oroville 1, Colusa 1, Fresno County 4, Kern County 3, Los Angeles County 10, Alhambra 2, Beverly Hills 2, Burbank 2, El Monte 1, Huntington Park 2, Inglewood 2, Long Beach 4, Los Angeles 57, Redondo 1, San Gabriel 1, Torrance 1, Lynwood 1, South Gate 1, Merced County 2, Orange County 4, Anaheim 1, Fullerton 1, Santa Ana 2, Sacramento 4, Hollister 1, San Bernardino County 2, Colton 2, San Bernardino 3, Upland 1, San Diego 1, San Francisco 18, San Joaquin County 1, Lodi 3, Stockton 3, San Mateo County 2, Daly City 1, Santa Clara County 2, San Jose 1, Sunnyvale 1, Stanislaus County 1, Modesto 3, Turlock 1, Sutter County 1, Tulare County 2, Dinuba 3, Lindsay 1, Ventura County 1.

##### Scarlet Fever.

280 cases of scarlet fever have been reported, as follows: Berkeley 4, Oakland 16, Gridley 1, El Dorado County 1, Fresno County 8, Kern County 5, Hanford 1, Los Angeles County 27, Alhambra 5, Arcadia 1, Beverly Hills 1, Burbank 1, Compton 1, Glendale 12, Hermosa Beach 2, Inglewood 1, La Verne 1, Long Beach 10, Los Angeles 52, Monrovia 1, Pasadena 8, Redondo 1, Santa Monica 2, Whittier 2, South Gate 1, Maywood 4, Merced County 1, Los Banos 1, Orange County 2, Anaheim 2, Brea 1, Fullerton 7, Santa Ana 1, Riverside County 1, Riverside 5, San Bernardino County 2, Colton 1, San Bernardino 1, Upland 1, San Diego 8, San Francisco 23, San Joaquin County 1, Manteca 1, Stockton 6, San Mateo County 1, Burlingame 2, Santa Barbara County 1, Santa Clara County 10, Mountain View 4, Palo Alto 1, San Jose 14, Sunnyvale 1, Sonoma County 1, Healdsburg 1, Stanislaus County 2, Turlock 1, Sutter County 1, Red Bluff 1, Tulare County 3, Santa Paula 2.

\* From reports received on January 24th and 25th for week ending January 22nd.

##### Measles.

1687 cases of measles have been reported, as follows: Berkeley 161, Hayward 3, Oakland 121, Butte County 11, Chico 8, Gridley 1, Colusa County 3, Colusa 1, Contra Costa County 1, Walnut Creek 1, El Dorado County 6, Fresno County 5, Reedley 6, Humboldt County 5, Brawley 1, Kern County 19, Bakersfield 3, Kings County 1, Hanford 8, Lakeport 1, Lassen County 8, Susanville 11, Los Angeles County 97, Alhambra 1, Beverly Hills 1, El Monte 4, Glendale 5, Huntington Park 2, Inglewood 2, La Verne 1, Long Beach 99, Los Angeles 156, Monrovia 1, Montebello 1, Pasadena 11, Pomona 1, San Fernando 1, Santa Monica 36, Whittier 16, Lynwood 1, Monterey Park 1, Signal Hill 1, Maywood 1, Madera County 1, Sausalito 13, Merced County 1, Monterey County 24, Grass Valley 1, Nevada City 7, Orange County 41, Anaheim 5, Fullerton 34, Huntington Beach 3, Orange 1, Santa Ana 2, Lincoln 3, Riverside County 14, Riverside 2, San Jacinto 1, Sacramento 88, North Sacramento 4, San Bernardino County 11, Colton 17, Ontario 1, Redlands 3, San Bernardino 13, Upland 1, San Diego County 2, National City 11, San Diego 29, San Francisco 116, San Joaquin County 107, Lodi 36, Manteca 1, Stockton 64, San Luis Obispo County 1, San Luis Obispo 1, San Mateo County 3, Burlingame 1, Santa Barbara County 4, Santa Barbara 12, Santa Clara County 14, Gilroy 3, Palo Alto 50, San Jose 12, Sunnyvale 2, Watsonville 4, Solano County 1, Benicia 1, Petaluma 7, Stanislaus County 8, Modesto 7, Newman 1, Turlock 6, Sutter County 8, Tehama County 9, Tulare County 6, Dinuba 1, Visalia 1, Tuolumne County 1, Ventura County 1, Oxnard 1, Yolo County 25, Woodland 15.

##### Smallpox.

62 cases of smallpox have been reported, as follows: Alameda County 1, Oakland 6, Brawley 1, Hanford 1, Burbank 2, Glendale 1, Long Beach 1, Los Angeles 6, Sacramento County 32, Sacramento 1, San Francisco 1, San Joaquin County 1, Manteca 1, Rio Vista 2, Petaluma 4, Turlock 1.

##### Typhoid Fever.

14 cases of typhoid fever have been reported, as follows: Fresno County 1, Brawley 1, Los Angeles 2, Madera County 2, Riverside County 1, Sacramento County 2, San Bernardino County 1, San Joaquin County 1, California 3.

##### Whooping Cough.

91 cases of whooping cough have been reported, as follows: Berkeley 9, Oakland 22, Pleasanton 1, Pittsburg 8, Eureka 2, Los Angeles County 8, Glendale 3, Long Beach 4, Los Angeles 8, Pasadena 3, Anaheim 2, Riverside County 1, San Diego County 1, San Diego 2, San Francisco 13, Burlingame 1, San Jose 3.

##### Meningitis (Epidemic).

2 cases of epidemic meningitis have been reported, as follows: Sacramento 1, Tuolumne County 1.

##### Poliomyelitis.

2 cases of poliomyelitis have been reported, as follows: Kern County 1, Mayfield 1.

##### Encephalitis (Epidemic).

2 cases of epidemic encephalitis have been reported, as follows: Berkeley 1, Long Beach 1.

##### Jaundice (Epidemic).

San Diego reported two cases of epidemic jaundice.



## COMMUNICABLE DISEASE REPORTS.

Disease	1926-1927				1925-1926			
	Week ending			Reports for week ending Jan. 22 received by Jan. 25	Week ending			Reports for week ending Jan. 23 received by Jan. 25
	Jan. 1	Jan. 8	Jan. 15		Jan. 2	Jan. 9	Jan. 16	
Anthrax	1	0	0	0	0	0	0	0
Botulism	0	0	0	0	1	0	0	0
Chickenpox	262	482	465	503	220	312	321	254
Diphtheria	131	192	168	181	81	90	96	112
Dysentery (Bacillary)	0	1	0	0	3	0	0	0
Encephalitis (Epidemic)	0	1	1	2	5	1	1	0
Gonococcus Infection	94	105	106	85	74	112	121	108
Influenza	36	37	48	39	186	465	683	881
Jaundice (Epidemic)	0	0	0	2	0	0	0	0
Leprosy	1	2	1	0	0	1	0	0
Malaria	1	1	0	1	1	0	0	0
Measels	830	1284	1686	1687	30	44	45	43
Meningitis (Epidemic)	6	6	4	2	4	5	4	8
Mumps	97	161	236	208	169	299	227	275
Paratyphoid Fever	0	0	1	0	0	1	0	1
Pneumonia (Lobar)	109	110	105	70	138	130	95	95
Poliomyelitis	2	3	3	2	3	1	2	1
Rabies (Animal)	6	6	10	5	6	0	8	5
Rabies (Human)	0	0	0	0	0	0	0	0
Rocky Mt. Spotted Fever	0	0	0	0	0	0	0	0
Scarlet Fever	200	233	315	280	138	173	158	156
Smallpox	8	22	34	62	54	81	172	95
Syphilis	119	150	113	112	87	147	105	95
Tetanus	1	0	0	1	1	1	3	0
Trachoma	7	0	2	7	1	1	19	3
Trichinosis	0	0	2	5	1	0	0	0
Tuberculosis	184	157	136	186	126	170	196	179
Typhoid Fever	13	26	13	14	15	16	16	11
Typhus Fever	0	0	0	0	0	0	0	0
Whooping Cough	53	94	96	91	77	109	126	48
Totals	2161	3073	3545	3545	1421	2159	2398	2370

## COMMUNICABLE DISEASES BY AGE GROUPS—DECEMBER, 1926.

Disease	0-1	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55+	Adult
Anthrax						1					
Chickenpox	30	323	956	173	35	12	23	9	1		7
Diphtheria	19	165	294	116	44	31	64	26	7	10	9
Dysentery (Bacillary)	1	3	1				1		1		1
Encephalitis (Epidemic)		1	1	1	2			3		1	
Erysipelas	5		1	4	1	2	7	3	10	10	1
German Measles		14	35	11	5		3	2			1
Gonorrhoea	2	4	10	8	51	108	157	47	15	6	8
Hookworm											
Jaundice (Epidemic)				1			1				
Leprosy							1	3	1		
Malaria		1									
Measles	73	869	2478	416	115	43	51	18	1		23
Meningitis (Epidemic)	2	1	4		1		1	2		1	2
Mumps	3	36	310	190	52	26	20	10	5	1	16
Ophthalmia Neo	2	1									
Paratyphoid			1								
Pellagra								1		2	1
Pneumonia (lobar)	31	26	26	12	7	16	27	43	29	89	16
Poliomyelitis	1	8	2	3							
Scarlet Fever	3	225	602	180	53	29	45	17	1		13
Smallpox	1	8	8	9	7	8	3	6	4	4	
Syphilis	10	5	4	13	44	101	167	127	63	44	9
Tetanus		1			1				1		
Trachoma		2	14	9			1	2			
Tuberculosis	4	9	21	18	39	93	183	137	73	75	12
Typhoid Fever		2	15	10	8	8	8	9	8	2	
Whooping Cough	26	119	121	4			1				1
Beri-Beri							1				